IN THE CLAIMS

Please amend claims 27-29, 32, 35-40, and 43 as follows:

1-26. (CANCELED)

27. (CURRENTLY AMENDED) A method for reducing the asymmetry error in a beacon, wherein the beacon comprises of multiple beams, and each beam is formed from a multiplicity of feed channels, comprising the step of:

(a) computing beacon asymmetry angles; and

(b) using the beacon asymmetry angles to correct the beacon sensor measurements.

28. (CURRENTLY AMENDED) The method of claim 27, wherein the step of using the beacon asymmetry angles to correct the beacon sensor measurements includes the step of using the beacon asymmetry angles as beacon bias angles.

29. (CURRENTLY AMENDED) The method of claim 27, wherein the step of using the beacon asymmetry angles to correct the beacon sensor measurements includes the step of using the beacon asymmetry angles as time-varying beacon bias angles.

30. (ORIGINAL) The method of claim 27, wherein steps (a)-(b) are performed in a terrestrially-based processor.

31. (ORIGINAL) The method of claim 27, wherein steps (a)-(b) are performed by a satellite processor.

32. (CURRENTLY AMENDED) The method of claim 29, wherein the step of computing the beacon asymmetry angles comprises the step of:

computing a difference between known azimuth/elevation angles, (az el), and their corresponding predicted beam-formed azimuth/elevation angles, (az_c el_c):($az-az_c$ $el-el_c$).

33. (ORIGINAL) The method of claim 32, wherein the corresponding beam-formed azimuth/elevation angles are computed according to $az_c = K_{az} \frac{E^2 - W^2}{E^2 + W^2}$, and $el_c = K_{el} \frac{N^2 - S^2}{N^2 + S^2}$ where K_{az} and K_{el} are optimal beacon slopes, and E, W, N, and S are East, West, North, and South beam magnitudes of the beacon beams.

34. (ORIGINAL) The method of claim 33, wherein the E, W, N, and S beam magnitudes of the beacon are computed according to:

$E(az, el) = W_E{}^T X$;

$W(az, el) = W_W{}^T X$;

$N(az, el) = W_N{}^T X$;

$S(az, el) = W_S{}^T X$; and

wherein the W_E, W_W, W_N, and W_S are the channel weights of East, West, North, and South beacon beams, and X is a response of a plurality of feed chains at look angle (az el).

35. (CURRENTLY AMENDED) An apparatus for reducing the asymmetry error in a beacon, wherein the beacon comprises of multiple beams, and each beam is formed from a multiplicity of feed channels, comprising ~~the step of~~:

means for computing beacon asymmetry angles; and

means for using the beacon asymmetry angles to correct the beacon sensor measurements.

36. (CURRENTLY AMENDED) The apparatus of claim 35, wherein the means for using the beacon asymmetry angles to correct the beacon sensor measurements includes means for using the beacon asymmetry angles as beacon bias angles.

37. (CURRENTLY AMENDED) The apparatus of claim 35, wherein the means for using the beacon asymmetry angles to correct the beacon sensor measurements includes means for using the beacon asymmetry angles as time-varying beacon bias angles.

38. (CURRENTLY AMENDED) The apparatus of claim 35, wherein the means for computing beacon asymmetry angles and the means for using the asymmetry angles to correct the beacon sensor measurements comprise a terrestrially-based processor.

39. (CURRENTLY AMENDED) The apparatus of claim 35, wherein the means for computing beacon asymmetry angles and the means for using the asymmetry angles to correct the beacon sensor measurements comprise a satellite-based processor.

40. (CURRENTLY AMENDED) The apparatus of claim 35, wherein the means for computing the beacon asymmetry angles comprises:

means for computing a difference between known azimuth/elevation angles, (az el), and their corresponding predicted beam-formed azimuth/elevation angles, (az_c el_c):($az-az_c$ $el-el_c$).

41. (ORIGINAL) The apparatus of claim 40, wherein the corresponding beam-formed azimuth/elevation angles are computed according to $az_c = K_{az}\dfrac{E^2 - W^2}{E^2 + W^2}$, and

$el_c = K_{el}\dfrac{N^2 - S^2}{N^2 + S^2}$ where K_{az} and K_{el} are optimal beacon slopes, and E, W, N, and S are East, West, North, and South beam magnitudes of the beacon beams.

42. (ORIGINAL) The apparatus of claim 41, wherein the E, W, N, and S beam magnitudes of the beacon are computed according to:

$E(az,el) = W_E{}^T X$;

$W(az,el) = W_W{}^T X$;

$N(az,el) = W_N{}^T X$;

$S(az,el) = W_S{}^T X$; and

wherein the W_E, W_W, W_N, and W_S are the channel weights of East, West, North, and South beacon beams, and X is a response of a plurality of feed chains at look angle (az el).

43. (CURRENTLY AMENDED) The method of claim 27, wherein the beacon is a terrestrial beacon.

44. (PREVIOUSLY PRESENTED) The apparatus of claim 35, wherein the beacon is a terrestrial beacon.